Using Objective Criteria to Analyze Interventions: Navigating Through Student Retention Literature

David R. Arendale
University of Minnesota

ABSTRACT

Many developmental educators have been assigned increased responsibilities for campus-wide enrollment management activities. A new system is needed for educators to sort through more accurately and analyze the rapidly growing database of information related to student retention. This will enable the reader to identify promising practices for further investigation more quickly. This article provides a series of criteria scales to evaluate the likelihood of success among potential programs and identify the resources needed by the institution to implement change successfully. Scrutiny of potential retention programs must be increased by asking more questions early in the investigation process.

Developmental educators are increasingly called upon by their institutions to serve in positions of influence with enrollment management task forces that are charged with increasing student persistence and graduation rates. Being an expert with this topic has become more challenging as there has been an exponential growth in the professional literature. Several organizations host national conferences each year that are devoted to student persistence, including the American Association of Collegiate Registrars and Admissions Officers, Educational Policy Institute, and Noel-Levitz. At least two national publications publish in this area of scholarship, the *Journal of College Student Retention* and the *Recruitment & Retention in Higher Education Newsletter*. A number of publications identify best practices in this area (e.g., Habley & McClanahan, 2004; Noel, Levitz, & Saluri, 1985; Thomas, Quinn, Stack, & Casey, 2003; Upcraft, Gardner, & Barefoot, 2005). There are more than 4,000 citations in the national Educational Resources Information Center (ERIC) database that contain the term "student retention" in a postsecondary setting (ERIC, 2005).

Sorting through all these conference presentations, reports, articles, books, brochures, and other descriptive literature is a challenge for any educational leader. Some of the literature describes home-grown student retention programs that have only operated at a single institution. Other publications describe programs that have been replicated at other institutions in addition to the one that first created the academic intervention program. A better system is needed to help educators select from among this burgeoning database of programs and practices that all claim effectiveness for increasing student persistence and graduation rates.

Traditional System for Selecting Intervention Programs

There are common patterns that many educators follow when seeking an intervention system to address the premature departure of students. Often a delegation of one or more is sent to a national conference to listen to a sample of concurrent presentations describing student retention programs. A decision about which session to attend is based on short presentation titles and 50-word summaries from the conference program book. Too often the speakers do not provide research and results of evaluation studies, detailed cost breakdowns, and barriers to implementation. A similar pattern is replicated in written

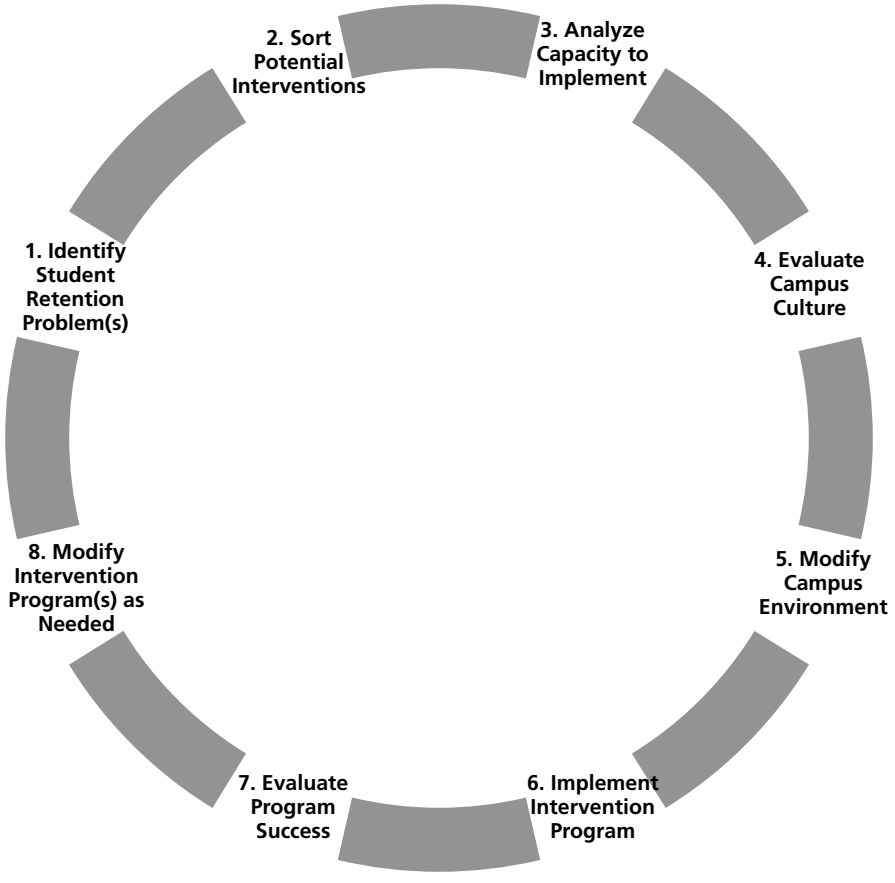
reports or articles that describe the interventions. Little follow-up occurs between the speakers, authors, and audience members. Institutions commit resources of time, personnel, and money to implement intervention programs on the basis of several articles or listening to a conference presentation. A better system is needed to be more accurate, timely, and cost-effective in selecting new programs to adopt.

New System for Selecting and Implementing Intervention Programs

Selecting the appropriate academic intervention or making a change in institutional policies is contingent upon many factors. What are the unique academic and cultural issues at the institution, and which academic interventions are best fitted to meet those needs? Is there clear evidence that the intervention is transportable and will contribute to higher academic achievement at a new adopting institution, as well as the reported success at the institution where it was first developed? What is the capacity of the institution to implement the intervention or policy regarding administrative support, faculty support, skill level of the intervention program, and the cost to implement and continue the program?

Based on 20 years of experience as a learning center director, enrollment management leader, and director of the National Center for Supplemental Instruction at the University of Missouri-Kansas City, I have developed a different perspective for facilitating change regarding improved student graduation rates. An academic intervention or policy decision on one campus may not be effective on another one due to a variety of reasons. The following model presents a decision-making process that enables institutions to implement change, monitor its success, and make modifications to improve results more effectively.

Figure 1. **Transformation Cycle for Successful Implementation of Student Retention**



This intervention implementation model has eight stages of activities. The stages are arranged in a circle because after implementing an intervention program, it may be necessary to implement new or revised programs based on a careful evaluation of the current intervention program, review of the campus culture, and identification of new student subpopulations to serve more effectively. This will require going through the cycle of intervention implementation. These eight stages require the institution to:

1. Identify the student retention problem by determining the characteristics of the students who are dropping out of the institution.
2. Sort through potential intervention programs by evaluating their likelihood of success at a particular institution and the requirements for implementation.
3. Analyze the capacity of a particular institution to implement the intervention program.
4. Evaluate an institution's campus culture and to what degree it will embrace and support the student subpopulation identified previously that it wants to retain (stage 1 of this process).
5. Modify the campus culture by taking specific action steps that change it to be more supportive of the identified student population and conducive of its success.
6. Implement the identified intervention program designed to increase student retention at the campus.
7. Evaluate the outcomes from the intervention program through rigorous formative and summative evaluation that may include quantitative and qualitative data analysis.
8. Modify as necessary the intervention program based on careful and on going evaluation (stage 7). A possible result of this evaluation stage may be identification of additional student populations to serve, implementation of a new or additional intervention program, and changes in the campus culture to meet the needs of its students more effectively. This process would require going through the intervention cycle again (stages 1 to 8).

Sorting and Analyzing Potential Interventions

This article focuses on one element of the intervention cycle, sorting of potential interventions (stage 2). The attention in this activity is solely directed to understanding the elements and nuances of the potential intervention programs. To make this process more objective and less swayed by the personalities promoting the potential interventions, five sets of objective criteria are used to evaluate potential programs or policies supporting higher student achievement and persistence towards graduation accurately. The criteria permit the user to compare among possible actions or intervention programs. The intervention implementation model presented previously (Figure 1) employs four of these same criteria during stage 3 when comparing the identified elements for successful implementation with the capacity of the institution to meet or exceed these requirements.

Stage two is focused on sorting potential interventions. The most objective way to go about this activity is to discern the type of evidence that is cited to support the efficacy of the intervention program. The scale listed with the likelihood of success is arranged in order of increasing evidence. Each of the other four continuum scales are arranged in increasing levels of energy and involvement required by the institution to implement the program with 1 representing the lowest level of energy or change required. Interventions or policy changes with high scores require more time and resources to implement than others with lower scores.

Criteria Scale 1: Likelihood of Success: Evidence of Effectiveness

A prerequisite to selecting an academic intervention or making changes in campus policies is to evaluate carefully the evidence for effectiveness and the capacity of the individual or institution that originally created the practice to provide additional information and training. Time limitations often preclude answering all of the following questions during a conference presentation, but it is reasonable for them to be addressed in professional articles, conference handouts, and during follow-up discussions with presenters. Lack of answers to these questions may be a good prompt for encouraging investigation of other intervention programs.

The following scale provides an increasing level of evidence of the likelihood of success in implementing the practice.

1. There is little evidence or documentation that the practice is effective or is based on current research-based educational theory.

2. The practice is based upon sound educational theory and other previously validated successful practices.

3. The practice has undergone rigorous evaluation at one institution.

4. The practice has undergone evaluation at one institution over a period of time with consistent results of positive outcomes.

5. Validation of the practice has occurred through one or more external agencies (e.g., accrediting agencies, peer-reviewed publications, national awards competitions).

6. The intervention has been replicated successfully at several other institutions in addition to the one that originally created it.

7. There are additional sources of information, consultation services, and training workshops about successful implementation of the practice.

Considering the potential economic and social impact of implementation of a potential new program or policy, it is critical to understand more fully the challenges with implementation and ongoing operation. Considering the total cost of starting and operating a new program, this is a small investment of time and money.

Criteria Scale 2: Institutional/Administrative Involvement

This scale indicates the level of involvement at the institution-wide level needed to implement the intervention successfully. The scale is roughly arranged from no involvement to very high involvement. It is possible that multiple responses will be required to implement a specific intervention. Obviously there must be strong support at the senior administrative level and perhaps from the governing board of the institution for some interventions that require institution-wide support.

The following scale indicates increasing levels of support required by the institution to implement the intervention.

1. There is no need for institutional support to implement this activity or policy.

2. Actions are taken by individual faculty members and academic departments. There are no significant institution-wide activities or policies needed to support the academic intervention.

3. Policies related to academic intervention programs require adherence to appropriate national standards in the areas of academic advising (Council for the advancement of Standards [CAS], 2005); adjunct instructional programs (National Association for

Developmental Education [NADE], 2005); tutoring (Council for the Advancement of Standards [CRLA], 2005; NADE, 2005); developmental credit courses (NADE, 2005); learning assistance programs (CAS, 2005); mentoring (CRLA, 2005); new student orientation (CAS, 2005); and TRIO and other similar educational opportunity programs (CAS, 2005). These standards prescribe compliance issues that require significant institutional response.

4. Institution systematically collects and disseminates cognitive and motivational information about all students when they enter the institution to all appropriate college personnel such as the academic advisors, academic intervention program managers, and other key campus individuals. These data sources may include the ACT (American College testing Service [ACT], 2005) and SAT (College Board, 2005) standardized exams, Cooperative Institutional Research Program survey (CIRP, 2005); high school graduation percentile rank, Learning and Study Strategies Inventory (Weinstein & Mayer, 1986); Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991); Noel-Levitz College Student Inventory (Noel-Levitz, 2005), and various vendor-produced, standardized course content assessments.

5. Individual course professors administer course content assessments on the first day of class to confirm appropriate class enrollment and encourage participation in voluntary intervention programs.

6. Institution systematically conducts evaluation studies regarding the effectiveness of its academic intervention programs using rigorous procedures as suggested by the American Educational Research Association (AERA, 2005); American Evaluation Association (AEA, 2005); Council for the Advancement of Standards (2005); and the National Association for Developmental Education (2005).

7. Institution uses college pre-entry information about students to recommend placement into courses and participation in academic intervention programs.

8. Institution uses college pre-entry information about students for mandatory placement into courses and mandatory participation in academic intervention programs.

9. Institution has committed sufficient local economic resources and political power to implement academic interventions deemed essential by campus policymakers, faculty members, staff members, and students.

Criteria Scale 3: Faculty Member Support and Involvement

This scale indicates the level of involvement at the classroom level needed to implement the intervention successfully. Some intervention programs may require multiple levels of involvement by faculty members. In recent years more intervention programs are requiring higher levels of involvement by faculty members for successful implementation, thereby significantly impacting their workload and job expectations.

Each succeeding item on the scale progressively requires more involvement by the faculty member:

1. Not supportive of academic interventions because the faculty person believes that the course is designed to serve as a gatekeeper to eliminate or redirect (from faculty member's perspective) inappropriately enrolled students in the class to another lower-level course, to change academic major, or even to select another institution to attend.

2. Indifferent to academic interventions due to priorities in other areas and does not have time to do any additional work.

3. Mildly interested in academic interventions, but has little time to do additional work. Mildly supportive of services available for students in the class.

4. Strongly interested in academic interventions, but has little time to do additional work. Highly supportive of services available for students in the class.

5. Strongly interested in academic interventions, but has limited time to develop and administer a course placement assessment instrument on the first day of class. The results of the assessment could confirm correct course placement, encourage transfer to more appropriate course, or encourage student to seek academic assistance.

6. Strongly interested in academic interventions and has moderate time to engage in supplemental course activities such as administering a course placement assessment, developing student worksheets, assisting with training a student paraprofessional, or developing additional curriculum materials.

7. Strongly interested in academic interventions and has extensive time to engage in supplemental course activities such as administering a course placement assessment, developing extensive student worksheets, training a student paraprofessional, providing on going mentoring and supervision of the student paraprofessional during the academic term, and developing additional extensive curriculum materials.

8. Strongly interested in academic interventions and will integrate them into the course lecture sessions. Examples of this commitment level include integrating critical thinking activities with course content material, modeling use of learning strategies with content material during class sessions, and developing extensive additional curriculum materials.

Criteria Scale 4: Skill Level of Direct Service Provider

This scale indicates the level of expertise and skill of the person who provides direct and indirect service to the targeted students. A number of intervention programs require multiple responses from this scale because the program requires not only student paraprofessional service providers who provide the direct service with the targeted students, but also professional staff or faculty members to supervise and train the student paraprofessionals. A key factor in the success of most intervention programs that depend upon student employees is the quality and quantity of the student worker training program and the provision of periodic direct supervision of paraprofessionals by a qualified staff or faculty member during the academic term as they provide service to others (Arendale, 2001).

Each scale item progressively requires more expertise of the person who provides service to the targeted students.

1. No prerequisite skill level required. Either the intervention program requires no direct contact with the targeted students, or the expertise level needed by the provider of the service could be met by nearly any person of college age or older.

2. Undergraduate student skill level is required to work in the intervention program.

3. Graduate or professional student skill level is required due to one or more of the following reasons: the need for additional academic content knowledge, an age or maturity difference between them and the students served, or the meeting of institutional expectations that only graduate students provide service for undergraduates.

4. Full-time faculty or staff member skill level is required due to one or more of the following reasons: the need for additional academic content knowledge, an age or maturity difference between them and the students served, or the meeting of institutional

expectations that only full-time faculty or staff members can train or supervise student paraprofessionals.

Criteria Scale 5: Financial Investment Level

This scale indicates the level of funding for effective implementation of the intervention. Some intervention programs require relatively little financial investment because they are primarily policy changes or rearrangements of current budgets. Other interventions may require multiple responses due to complicated funding needs such as salary for the direct service provider, often a student paraprofessional, work release or supplemental funding for the full-time faculty or staff members who supervise the program, curriculum materials, and other ongoing expenses.

This area of analysis is often underestimated by policymakers who may fund initial pilot implementation of the intervention or find support through external grant funds, without budgeting sufficient resources for its institutionalization and long-term support. Without stable support from the institution, the likelihood of continued success is jeopardized. With the diminished availability of state or federal grants to support implementation of institutional programs, optimistic reliance upon these sources is unwise.

Each scale item requires progressively more financial resources for the successful implementation of the intervention.

1. No significant financial costs required for implementation of the intervention program or policy.
2. Minor expenses are required that are related to supplies needed for the intervention program, assuming that the personnel costs are paid by other sources.
3. Salary and fringe benefits for one or more undergraduate student paraprofessionals are required.
4. Salary and fringe benefits for one or more graduate student paraprofessionals are required.
5. Release time, or overload salary and fringe benefits for faculty or staff members in addition to any paraprofessional staff.
6. Addition of one or more new full-time faculty or staff member to teach or to supervise the academic intervention is required in addition to any paraprofessional staff.

Reconnecting the Criteria to the Cycle for Implementing Interventions

This article has focused on only stage two of the eight-stage intervention implementation cycle (Figure 1). These five sets of criteria make the process of sorting potential interventions a more objective process. At first glance, this article seems to be an endless series of lists. Hopefully the reader will find that it is much more than that. The goal is to present a new approach to thinking about and sorting through the rapidly growing literature concerning student intervention programs. With the tremendous growth of information in this area, especially among non-peer-reviewed venues such as Internet-posted documents, ERIC publications, and the like, new tools are needed for analysis and sorting.

Much more work is needed regarding these criteria because they are not precise enough yet nor are they all arranged in a perfect ascending order of complexity or demand. However, they are a first start. Additional publications are needed to explore the other seven stages of the implementation cycle. A directory of interventions needs to be rated using the

five sets of criteria presented in this article. This can help move the field forward in terms of its accessibility and effectiveness by the education community.

Conclusion

I am reminded of the expression, "we are drowning in data but are starved for knowledge and wisdom." Although we may have ready access to articles, reports, and presentations on student retention, we need to increase our scrutiny of these information sources. We must ask more questions early in the investigation process, probe for the essential components of a program, and vigorously scrutinize the research studies that evaluate the retention program. These activities will enable educators to sort more quickly and accurately through the confusing data and emerge with more likely prospects to enable our institutions to be more successful with assisting students achieve their aspirations and dreams.

References

American College Testing Service. (2005). *ACT home page.* Retrieved June 19, 2005, from http://www.act.org/

American Educational Research Association. (2005). *AERA home page.* Retrieved June 19, 2005, from http://aera.net/

American Evaluation Association. (2005). *AEA home page.* Retrieved June 19, 2005, from http://www.eval.org/

Arendale, D. R. (2001). Effect of administrative placement and fidelity of implementation of the model on effectiveness of Supplemental Instruction programs. *Dissertation Abstracts International,* 62, 93. (ERIC Document Reproduction Service No. ED480590). Retrieved June 24, 2004, from http://www.tc.umn.edu/~arend011/disdir.htm

College Board. (2005). *College Board home page.* Retrieved June 19, 2005, from http://collegeboard.com/

College Reading and Learning Association. (2005). *CRLA home page.* Retrieved June 19, 2005, from http://www.crla.net

Cooperative Institutional Research Program. (2005). *CIRP home page*. Retrieved June 19, 2005, from http://www.gseis.ucla.edu/heri/cirp.htm

Council for the Advancement of Standards. (2005). *CAS home page.* Retrieved June 19, 2005, from http://www.cas.edu

Education Resources Information Center. (2005). *The educator's reference desk.* [On-line]. Retrieved May 1, 2005, from http://www.eric.ed.gov

Habley, W. R., & McClanahan, R. (2004). *What works in student retention?* Iowa City, IA: American College Testing Service. Retrieved February 21, 2005, from http://www.act.org/path/postsec/droptables/index.html

National Association for Developmental Education. (2005). *NADE home page.* Retrieved June 19, 2005, from http://www.nade.net

Noel, L., Levitz, R., & Saluri, D. (Eds.). (1985). *Increasing student retention: Effective programs and practices for reducing the dropout rate.* San Francisco: Jossey-Bass.

Noel-Levitz. (2005). *Noel-Levitz/USA Group home page.* Retrieved June 19, 2005, from http://www.noellevitz.com/

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ).* Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Thomas, L., Quinn, J., Stack, K., & Casey, L. (2003). *Effective approaches to retaining students in higher education.* Stoke-on-Trent, UK: Institute for Access Studies, Staffordshire University. Retrieved March 15, 2005, from http://www.staffs.ac.uk/institutes/access/docs/Directory1.pdf

Upcraft, M. L., Gardner, J. N., & Barefoot, B. O. (Eds.). (2005). *Challenging & supporting the first-year student: A handbook for improving the first year of college.* San Francisco: Jossey-Bass.

Weinstein, C. E., & Mayer, R. E. (1986). The teaching of learning strategies. In M. Wittrock (Ed.), *Handbook of research on teaching* (pp. 315-327). New York: Macmillan.